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GARMANNIA SAUCRA, A NEW GOBIID FISH FROM
JAMAICA¹

BY C. RICHARD ROBINS

The Marine Laboratory, University of Miami

Among the fishes collected recently in Jamaica by John E. Randall and associates was a single specimen of a distinctive but undescribed goby of the genus *Garmannia*. This species is described below. I am indebted to James E. Böhlke and Ernest A. Lachner for comments concerning the manuscript. The photographs are by Walter R. Courtnay, Jr. The holotype is deposited in the Academy of Natural Sciences of Philadelphia.

Garmannia saucra, new species

Fig. 1

Holotype: ANSP 92985, an adult female, 15.9 mm standard length collected at South Cay, Jamaica, 3 miles south of Port Royal, north side of cay in 3-5 feet of water, 18 December 1959, by John E. Randall, T. Chess, and D. Steven (field number: CRR-Car-5).

Diagnosis: A strikingly spotted species of *Garmannia* with reduced squamation (4 transverse rows on caudal peduncle and a vertical basicaudal row of four modified scales). Fin-ray formula: spinous dorsal fin-VII; second dorsal fin-I, 10; anal fin-I, 9; pectoral fin-15-15; segmented caudal rays-17, branched caudal rays-11.

Description: The pallid body is conspicuously dark-spotted (see Fig. 1); the single series along the lower sides consists of 12 vertically elongate blotches, well separated from the dorsal series. The caudal base is outlined by a dark curved mark. Along the mid-dorsal line are 13 dark spots extending from the nape to the dorsal insertion of the caudal fin. A dorso-lateral series of 12 dark spots extends from the area just dorsal of the operculum to the caudal peduncle. The dorsolateral and mid-dorsal series merge under the posterior portion of the soft dorsal fin. A dark diagonal bar crosses the pectoral-fin base. The head is irregularly marked, the pattern showing lateral asymmetry. The anterior narial tubes are black.

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All fins are unmarked. Life colors are unrecorded but presumably are much the same as in the preserved specimen (related species lack bright life colors).

The seven spines in the first dorsal fin are arranged as in all other species of *Garmannia* (and many other gobiid genera): the anterior five are equally spaced and spines 6 and 7 are about twice as remote from each other and from the first five spines. Such spacing characteristically results (in other gobiids studied by the writer) from two vertebrae lacking interneural elements and also the spines that would attach to them. The typical gobioid formula is 1 ray to 1 interspinal series to 1 vertebra. Many illustrators have ignored or overlooked this staggered placement of first-dorsal elements and so its occurrence through various phyla of gobioid fishes cannot be easily traced from current literature.

No spines are elongate in the type but it is a female. Presumably males will have one or several elongate spines as in all other species of *Garmannia* (except *parri*).

Eleven elements are in the second dorsal fin, one spine and ten soft rays, the last split to its base. One dorsal ray is branched near its tip. The anal fin contains one spine and nine soft rays, the last split to its base. Several anal rays are branched. The pectoral fins are damaged but both contain 15 rays, all of which are branched except for the upper one or two and the lowest.

The pelvic disc is complete, its central rays are longest and the interspinal frenum is well developed forming a definite basal cup. The caudal fin is nearly truncate behind with rounded corners. As in many gobiids, there are 17 segmented caudal rays, 11 of which are branched.

Head pores are present and well developed. Two are on a vertical canal (the preoperculomandibular canal of other fishes) along the margin of the preopercle. One is on the lateral canal above the anterior margin of the opercle. Each supraorbital canal contains four pores, one behind the eye opposite the posterior dorsal quadrant, two median pores on the interorbit, the posterior one on a line even with the hind margin of the eye, the anterior on a line even with the anterior margin of the pupil, and the fourth pore slightly anterior and mesial to the posterior nostril. One pore, behind the eye near or slightly above is midpoint, is in the infraorbital canal. No head pore is tubular. The posterior nostril is a large opening near the anterior rim of the orbit. The anterior nostril opens through a well-developed tube.

Squamation is reduced in *saucra*. There is the usual vertical row of four modified scales along the caudal-fin base. Four moderate-sized scales are present in a row on the mid-side of the caudal peduncle. They are non-imbricate and strongly ctenoid, their posterior margin being nearly as decorative as the scales on the caudal-fin base. The anterior scale is alone but the posterior scale is in a row of three, and the next in a row of two. In all only seven or eight scales (the two sides differ) are present on each side of the caudal peduncle anterior to the vertical row along the caudal-fin base.



Dentition is confined to the jaws. The dentary patch is several rows broad, the outer enlarged with its posterior members largest but not caninoid. The patch in the upper jaw is perhaps narrower, again with the outer row largest and without canines. The tongue is short and is truncate anteriorly.

The general body form is best seen in Fig. 1. Lengths of body parts expressed as per cent of standard length (15.9 mm) are: head length—27; horizontal eye diameter—6.9; depth of body at (1) origin of spinous dorsal fin—19, (2) origin of anal fin—16; caudal-fin length—23; pelvic-fin length—21. Both pectoral fins were broken but apparently reached to the level of the anus.

The name *saucra* is from the Greek for graceful, pretty.

Discussion: The following species are currently assigned to *Garmannia* in western Atlantic waters. *G. macrodon* (Beebe and Tee-Van), *G. zebrella* Robins, *G. pallens* Ginsburg, *G. gemmata* Ginsburg, *G. schultzi* Ginsburg, *G. spes* Ginsburg, *G. hildebrandi* Ginsburg, *G. mediocricula* Ginsburg, *G. spilota* Ginsburg, and *G. hemigymna* (Eigenmann and Eigenmann).

G. spes and *G. schultzi* differ sharply from *saucra* in lacking the basicaudal row of modified scales and in having more (9–16) lateral scale rows. *G. hemigymna* has many scale rows (the scales continuing forward nearly to the axil of the pectoral fin), a barbel below the posterior nostril, more (19) pectoral rays and canine teeth. (*G. hemigymna* is here removed from the genus *Risor*).

G. spilota, *G. hildebrandi*, *G. mediocricula* and the Pacific *G. chiquita*, *G. paradoxa* (Günther) and *G. homochroma* all have extensive (about 25–34 transverse rows varying with the species) squamation and more pectoral rays (from 16–18 in *hildebrandi* to 21 in *mediocricula*).

The relations of *saucra* lie with the “subgenus” *Tigrigobius*, which contains *macrodon*, *zebrella*, *pallens*, and (fide Ginsburg, 1933: 55) *digueti* of the Eastern Pacific.

G. macrodon and *G. zebrella* are distinctly banded, and they possess canine teeth, a moderately high number (16–18 and 18–19 respectively) of pectoral rays. *G. pallens* is less banded than *macrodon* and *zebrella* (Böhlke and Robins, 1960: Pl. 3B) but is scarcely spotted. Also *pallens* has more scale rows (8–13). *G. gemmata* has more second dorsal elements (12–13), more scale rows (5–8, dorsally 8) and it has spotted dorsal and caudal fins.

Austrogobius de Buen (1951: 64–67, Pl. 1) erected for *Gobiosoma parri* Ginsburg should be placed in the synonymy of *Garmannia* and it may be close to or the same as the “subgenus” *Tigrigobius*. Its subgeneric status remains uncertain. *G. parri* differs from *saucra* in having a high number (21) of pectoral rays, and banded coloration and supposedly in the arrangement of papillae and pores on the head.

LITERATURE CITED

Böhlke, James E. and C. Richard Robins. 1960. Western Atlantic

- gobies of the genus *Lythrypnus*, with notes on *Quisquilius hipoliti* and *Garmannia pallens*. Proc. Acad. Nat. Sci. Philadelphia, 112: 73-98, 2 figs., 3 pls.
- de Buen, Fernando. 1951. Contribuciones a la Ictiología. V-VI. Sobre algunas especies de Gobiidae de la colección del Laboratoire Arago (Banyuls-Sur-Mer, Francia) y descripción de un nuevo género (*Austrogobius*) sudamericano. Bol. Inst. Paulista Oceanogr., 2(2): 55-73, 1 pl.
- Ginsburg, Isaac. 1933. A revision of the genus *Gobiosoma* (family Gobiidae) with an account of the genus *Garmannia*. Bull. Bing. oceanogr. Coll., 4(5): 1-59, 3 figs.

EXPLANATION OF FIGURE

Fig. 1.—ANSP 92985, female holotype of *Garmannia saucra*, 15.9 mm in standard length.

